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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/516,438	11/30/2004	Kassim Juma	1488(04-79)	5503

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EXAMINER	
KURTZ, BENJAMIN M	
ART UNIT	**PAPER NUMBER**
1723	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/05/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/516,438	JUMA, KASSIM	
	Examiner	Art Unit	
	Benjamin Kurtz	1723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 June 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *12-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *12-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 November 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *11/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 12-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daussan et al. US 5 690 161 in view of Morris et al. US 5 785 851 and Jones et al. US 5 520 823. Regarding claims 12 and 20, Daussan teaches a filter device (1b) comprising a protruding frame (11) joining a plurality of sieve plates (2a), the protruding frame and sieve plates defining a reservoir chamber (6) (fig. 3). Daussan does not teach a bonded network of graphitized carbon or each plate including a corrugated surface. Jones teaches a filter comprising a bonded network of graphitized carbon and a ceramic raw material (col. 2, lines 9-15). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the graphitized carbon network of Jones because the material does not pick up moisture from the atmosphere and has superior strength at ambient and elevated temperatures than prior are filters (col. 4, lines 13-23). Morris teaches a filter device with a plate including a corrugated surface (fig. 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use corrugation because the inlet surface has a large contact area which significantly increases the filtration capacity of the filter and the flow rate of the fluid passing therethrough (col. 1, lines 45-55). 'For molten steel filtration' is intended use.

Regarding claims 13 and 14, Morris teaches the corrugated surface but does not teach a specific dimension of the corrugation. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a suitable corrugation within the claimed range to optimize the filter, absent a showing of unexpected results by using the claimed range.

Regarding claims 15-19, Daussan further teaches each sieve plate defines a plurality of through holes (3) and the through holes of a first plate are spaced laterally from the through holes of a second plate (fig. 3); the through holes comprise a circular shape (fig. 2); and the sieve plates include substantially an identical geometry (fig. 3). Daussan teaches the effectiveness of any filter depends essentially on the diameter of the holes and the number of plates (col. 2, line 66 – col. 3, line 6), and if the diameter of the holes is less than 1mm filtration takes a long time and clogs easily. It would have been obvious to one of ordinary skill in the art to optimize the range of hole sizes in, view of the teachings of Daussan, to the claimed ranges as they are greater than 1mm and to filter out the desired sized particles.

Regarding claim 21, Daussan further teaches the filter material includes reinforcing fiber (col. 3, lines 43-44).

2. Claims 22-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rogers WO 01/40414 A1 in view of Daussan '161 and Morris '851. Regarding claim 22, Rogers teaches a method for producing a filter device comprising a bonded network of graphitized carbon, the method comprising: pressing a semi-damp mixture comprising ceramic powder and a graphitizable bonding precursor and fibers to obtain a sieve plate

having a disk shape, and firing the assembly in a non-oxidizing atmosphere to a temperature up to 1000 deg. C (pg. 5-7, 9 and 12). Rogers does not teach the configuration of the plates. Daussan teaches a filtering device comprising a protruding frame joining a plurality of sieve plates, the protruding frame and sieve plates defining a reservoir chamber with the plates joined by a binder (fig. 3, col. 4, line 66 – col. 5, line 1). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use make the protruding frame of Daussan because they allow metal to be exposed to treatment material prior to being introduced into a mold (col. 1, line 60 – col. 2, line 2). Morris teaches a filter device with a plate including a corrugated surface (fig. 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make a corrugation because the inlet surface has a large contact area which significantly increases the filtration capacity of the filter and the flow rate of the fluid passing therethrough (col. 1, lines 45-55).

Regarding claim 23, Daussan teaches a binder but does not teach the binder being ceramic or carbon. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the same components that are in the filter and because ceramic and carbon are durable under the operating conditions of the filter.

Regarding claims 25, 27 and 28, Rogers further teaches the firing occurs between 600-700 deg. C; the semi-damp mixture includes a graphitizable carbon bonding precursor; and the precursor is fired from 500-2000 deg. C.

Regarding claim 26, the specification defines roughening the surface as 'pressing directly the geometry providing a corrugation or height difference between the peaks

and troughs'. Morris teaches a corrugated surface with height difference between peaks and troughs and is therefore deemed to teach the claimed limitation.

Regarding claim 24, Rogers teaches the use of a non-oxidizing atmosphere for the step of firing the assembly. Rogers does not teach a reducing atmosphere. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a reducing atmosphere as it is a non-oxidizing atmosphere and will not adversely affect the firing process.

Conclusion

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin Kurtz whose telephone number is 571-272-8211. The examiner can normally be reached on Monday through Friday 8:00am to 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker can be reached on 571-272-1151. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Bk 1/29/07

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